THE HEALTH OF NEW YORK DURING SEPTEMBER.

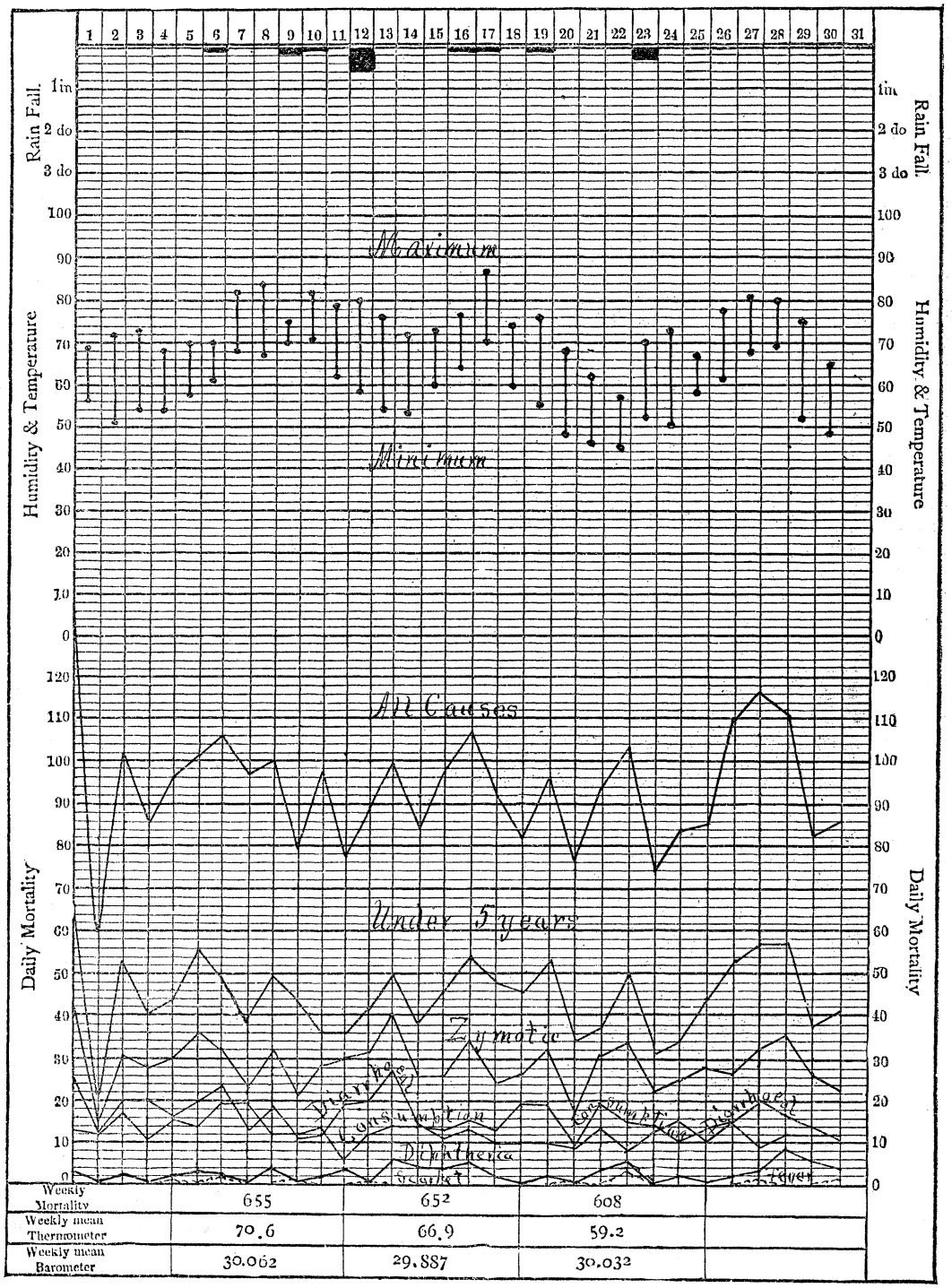
THE number of deaths which occurred in the city of New York during the month of September was 2,767, or 479 less than in the preceding month. The deaths among children under five years of age were 1,217: as compared with August, this represents a saving of 343 lives of children of this tender age. This improvement in the public health becomes still more evident if we compare September with July. In the latter the total mortality of this portion of the population mounted up to 2,499, more than double that which occurred during the former. This progressive gain is mainly to be attributed to the lower temperatures which prevail in the early autumn as compared with midsummer. In July, 240 persons died in a single day, the 8th, while the largest daily mortality of September was but 117, on the 27th. Diarrhoeal diseases claimed fewer victims by 226 than in August, and 903 less than in July. The deaths from consumption were 374, as compared with 443 in August. The September mortality from consumption was less than that of any other month of the year. Diphtheria also shows a diminution, the deaths from this cause being but 85, while in August they were 104. A similar reduction is noticeable in the deaths from scarlet-fever; 11 being recorded for September, as against 15 in August. Taken as a whole, the condition of the public health in the city of New York during the month of September was most satisfactory. That so few deaths should have been caused by such diseases as scarlet-fever and diphtheria in a population of one million and a half of people is certainly a noteworthy event.

The mean temperature for the month was 65.25° F. This was below the mean for the past ten years, which was 67.04° F. The maximum reached by the mercury was 87° F., on the 17th, at 4 P.M. The average for the past decade was 88° F.; so that, so far as its temperature was concerned, September may be regarded as an average month. The rainfall during the month was but 1.17 inches. That for the corresponding month in 1885 was .41 of an inch; in 1884, .21 of an inch; and in 1881, .97 of an inch. With these exceptions, the September rainfall has not been so small since 1869 as it was this year. Indeed, the average for ten years was 3.24 inches, while in one year, 1882, 16.85 inches of rain fell in the same month. The rainfall for the month of June was 3.35 inches, a little above the average for that month during a long series of years; in July, but 2.75 inches fell, the lowest for ten years, with the exception of 1881; in August, only .95 of an inch of rain fell; and in September we had another exceedingly small rainfall. The total amount of rain, therefore, which has fallen during the past three months, has been much below the average; and yet, as will be seen by a study of the records of the meteorological observatory at Central park, the rainfall for the nine months of this year, 29.10 inches, does not differ much from the average of the ten years just passed, which was 30.97 inches. The following table gives the rainfall for each of these months during the past ten years.

	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877
January.	3.91	3.06	5.22	2.68	5.08	4.80	2.02	2.63	4.46	2.62
February	4.89	4.56	4.92	4.21	3.43	4.93	2.12	2.02	3.75	1.24
March ...	2.83	.90	4.62	1.49	2.53	5.81	4.66	3.41	3.27	5.56
April	3.85	2.19	2.82	3.71	1.64	.95	2.90	4.33	1.97	2.73
May.....	5.40	1.86	3.74	2.83	4.20	3.20	.62	2.02	3.19	.95
June.....	3.35	1.32	4.98	3.32	2.52	5.35	1.14	3.15	3.08	2.80
July.....	2.75	3.59	4.74	3.21	3.21	1.25	8.53	3.58	4.62	5.73
August ..	.95	5.67	7.90	1.82	1.14	.86	5.26	7.95	7.97	2.77
Sept'ber..	1.17	.41	.21	3.25	16.85	.97	1.85	2.37	4.05	1.33
Total for 9 months	29.10	23.56	39.15	26.52	40.60	28.12	29.10	31.46	36.36	25.73

ACCLIMATIZATION IN NEW ZEALAND.

NO country presents such a field for experiments in acclimatization as New Zealand does, and in none have the results of such experiments been so marked. Previous to Captain Cook's visits, no mammalia — with the exception of a black rat and the dogs brought by the Maoris — were to be found in these islands. That intrepid navigator gave the natives pigs, and these animals soon became wild in many places, and are still to be found in the more inaccessible parts of the colony. But they have never become so numerous as to interfere in any way with settlement, — a remark which also applies to the stray cattle and sheep which have run wild in similar regions. The native rat has long been extinct, having been completely exterminated by the common brown species, which was early introduced by ships. The latter animals are extremely abundant, not only in settled districts and towns, but even in the remotest parts. They have probably had a share in exterminating many of the ground birds, such as native quail, which are not to be found now at all. The food of those which swarm in the back country must, however, be chiefly of a vegetable nature, for they periodically migrate in great numbers. The march of settlement is



Weekly Mortality	655	652	608	
Weekly mean Thermometer	70.6	66.9	59.2	
Weekly mean Barometer	30.062	29.887	30.032	

breaking up their feeding-ground in many parts, but it was not an uncommon occurrence, twenty or thirty years ago, for the traveller to come upon a huge army of rats on the march for new fields.

The most important mammalian introduction into these islands has certainly been that of the rabbit. In the southern portion of the South Island the responsibility of introducing these animals certainly rests with the Otago acclimatization society, which imported them from Tasmania in 1867. It must be said for the members of the society, that they acted in good faith, under the impression that they were doing a useful work, and little realizing what a curse their protegés were to become. Their action furnishes an illustration of the difficulty of foreseeing what effect changed conditions may produce upon any organism. Brought into a country where only a few sluggish hawks existed as natural enemies, the rabbits have increased almost without let or hinderance, and now occur in millions. Ten years ago they were almost rare: now many districts of the South Island are quite alive with them. It is impossible to realize their abundance in parts such as the Clutha valley without seeing them. The surface of the ground is honeycombed, the vegetation in places eaten nearly as bare as a macadamized road, while the animals towards evening are met with by thousands. Their effect on the stock-carrying capacity of the country has been ruinous, and their abundance has seriously retarded settlement. All sorts of devices have been tried in order to keep them down; the larger holders chiefly employing traps and dogs, and others resorting to grain poisoned by phosphorus. At considerable expense the pest is being kept in check in the populated districts; but in wild, unbroken country they multiply unchecked. The government is now trying what is generally considered to be a very dangerous experiment, viz., the liberation of weasels and stoats. If these creatures increase at all freely they will prove even a worse pest than the rabbits.

Hares, red-deer, axis-deer, and fallow-deer have been introduced by various acclimatization societies. The former are common, and are coursed regularly, but the phosphorus has nearly exterminated them in many parts. The deer are still only kept in preserves, being strictly looked after; but they are increasing steadily, and will probably furnish good sport, ere many years are past, to those who can afford the luxury of shooting them. The latest move in this direction is the proposed introduction of the chamois, as it is thought the southern Alps will be most suitable for these animals. The government has commissioned Sir Julius von Haast, who is at present in Europe, to make inquiry for these animals at the royal preserves in Bavaria and the Austrian Tyrol.

Native birds show a tendency to disappear rapidly before the European settler. The quail, formerly so abundant as to be shot by scores, are now quite extinct, this being partly due to the introduction of rats, cats, and dogs, but chiefly to the tremendous grass fires which have swept the country from side to side, and before which all ground animals disappear like smoke. Hence the necessity was early felt by the settlers, of introducing not only game-birds, but suitable insectivorous birds. Of the former, pheasant, partridge, and California quail have become well established in many parts. In Auckland particularly, pheasants became extremely common. But in other parts the peculiar results of the rabbit question have again manifested themselves; for, in adopting the phosphorized grain-cure for rabbits, these introduced game-birds have been exterminated in whole districts. This is the case, for instance, in southern and central Otago, where ten years ago pheasants were to be seen on every hillside, and now it is rare to come across one. It is probable also, that, if weasels increase, it will be almost futile to attempt the further introduction of game-birds.

A visitor to Dunedin at the present time, strolling into the forest-clad town-belt, might see or hear a few tuis (parson-birds) or korimakos (bell-birds), but these would probably be the only native birds to be met with. But on every side he would hear the pipe of the blackbird and thrush, and see abundance of house and hedge sparrows, chaffinches, linnets, and goldfinches. In the more open ground, sky-larks would be met with in abundance, while numerous flocks of starlings would be seen busily at work in the fields. Besides these, yellow-hammers and greenfinches are common, while very recently robin-redbreasts have been liberated. In most cases the introduced birds have developed no new habits here, remaining true to their traditional instincts of robbing gardens when there was any thing worth robbing in them, but for the greater part of the year depending upon outside supplies, which are sufficiently abundant in this land of plenty. But it is difficult in many districts to get a crop of cherries or strawberries, while the farmers are annually engaged in a crusade on the small birds. The linnets, yellow-hammers, and greenfinches in particular, attack the grain-crops as soon as the young grain is well formed; and long before it is ripe, wide stretches of the fields, especially near hedgerows, are thrashed clean. This has already led to war, the farmers offering rewards for dead birds and for eggs. Whether the good these birds do

by eating insects and seeds of weeds during eleven months of the year, is balanced by the evil they do during early harvest, is a question which has never been properly investigated. The starling is the bird whose record is most unsullied, as no one has aught but good to say about it. Immense flocks of them are now to be met with in all populated parts; and it is difficult to realize what insect devastation the country would be subject to, but for their presence. Australian magpies, minahs, and laughing jackasses have been introduced, but don't increase.

The attempts to acclimatize fish in this country have been in great part successful, though some notable failures have also been made. Several shipments of salmon ova have been made from Britain and America: in several instances all were dead on arrival in the colony. As long ago as 1874 some of these fish were successfully hatched out in the ponds on the Makarewa, a small tributary of the Oreti, and they grew well. A number of them were placed in the Aparima, a beautiful stream which flows into Foveaux Straits; but from that day to this they have never been heard of. Others were washed out of the ponds by a heavy flood, and these also have failed to put in an appearance again.

In 1878 California salmon were also turned out in large numbers in several South Island rivers, as many as 31,000 fry being liberated in two of the Otago streams; but these likewise have not been met with again. Whether they have all been destroyed or not is difficult, if not impossible, to find out. The previously introduced brown trout, the enormous indigenous eels, and the ubiquitous shags (cormorants) probably made great havoc in their ranks; but, presuming that some got away to sea, it is certainly remarkable that they do not seem to have found their way back to the rivers again. Had they done so, they would almost certainly have been met with by the numerous anglers who fish the southern streams for six months of the year, Only this year a most successful importation of Scotch salmon ova was made by the government, and young fish are now in the ponds of half a dozen of the local societies. The Otago society have about 4,000 of these. When at an age fit to turn out, it is intended to liberate all but a few hundred, which will be retained in the ponds. It is thought, that, though in opposition to their usual and instinctive habits, it may be possible to retain these fish, and breed from them in confinement. Should this prove to be the case, it will only be a question of time before the colony is well stocked with salmon.

The most remarkable results in fish acclimatization have certainly been achieved in regard to brown trout. These fish were introduced in 1868, partly from Britain, but chiefly from Tasmania, where they had been introduced a short time previously. The rate at which they have increased in the New Zealand rivers and lakes has simply been marvellous. Fish only five years old have frequently been found to weigh from ten to fourteen pounds, while in the lakes they have reached still larger dimensions. This remarkable rate of growth appears to have been due to the fact that there was a great abundance of suitable food in the streams, and few native fish to compete with them. Of late years the size of the fish taken has not been so large, showing partly that the food-supply has fallen off, and partly that the larger fish are being caught. These ten- and twenty-pound trout are themselves the greatest destroyers of ova and young fish, and are therefore not encouraged.

To show how remarkably changes of condition may affect the fish-supply in these waters, one case may be cited. The Lea stream, a tributary of the Taieri River, and a typically perfect trout-stream, was stocked in 1869 with 98 small trout. These increased in numbers very rapidly, so that in ten years the stream was full of splendid large fish, and it became the favorite stream of Dunedin anglers. Since 1880 some 19,000 young fish have been liberated, but the fishing has gradually fallen off, and now it is difficult to get a good basket. Some attribute this to the eels, which are large and numerous; others to the shags. Both surmises are probably incorrect, as eels and shags are destroyed whenever opportunity offers, and are not apparently more abundant than they were ten years ago. The real reason seems to be, that with the enormous increase of starlings, which has already been referred to, there has been, in all parts where these birds abound, an almost total disappearance of grasshoppers and other large insects. The food-supply in the smaller streams has thus been greatly diminished, and they cannot support the number of fish they did at first.

Of late years other varieties of trout have been introduced, such as Scotch burn and Loch Leven trout. It will be an interesting study for the naturalist of the future to observe whether the varietal differences which characterize these forms will remain persistent, or whether all will revert to one common and indistinguishable type. Other fish, such as American white-fish, perch, tench, etc., have also been introduced, but up to the present they have not made any remarkable progress.

From the foregoing record of facts, it will be seen that a remarkable field of observation for

the naturalist exists in these southern isles. Fortunately, in almost every instance, the date and locality of introduction of nearly every form of animal colonist can be exactly ascertained, and by careful observation and record it will be possible to chronicle every important change. We have already seen in New Zealand the remarkable case of a fruit-eating parrot, the kea (Nestor notabilis), becoming a true bird of prey. Learning to pick at the skins and offal of slaughtered sheep lying about stations and stock-yards, this bird has actually acquired the art of killing sheep. So greatly has this faculty been developed, that great tracts of mountain country in the interior of the South Island are now rendered uninhabitable for the sheep. It is thought that the chamois or any other active smooth-backed animal will prove too much for the kea; but the poor sheep, with its thick matted fleece, is at the mercy of the powerful bills and claws of these birds.

Similar cases, of altered habits under altered conditions, are more likely to occur in a new conntry, with so peculiar an indigenous fauna as New Zealand possesses, than in any other part of the globe: hence the importance of keeping a good record from the very beginning.

GEO. M. THOMSON.

Dunedin, Oct. 8.

LONDON LETTER.

THE movement for the establishment of a British school of archeology at Athens seems in a fair way to succeed. A meeting of the general committee and subscribers to the scheme was held a day or two ago, at which it was stated that a director's house, with library and lecture-room attached, had been built at Athens, on a site presented by the Greek government. The University of Oxford, the Hellenic society, and other public bodies contributed towards the annual expenses, and Mr. F. C. Penrose was to assume the directorship of the school for one year from this present November. Among those present at the meeting were the head masters of several of the great English public schools, the minister for Greece, and other influential persons.

Several of the most distinguished medical men in London assembled at the College of physicians recently, to hear the Harveian oration (instituted by Harvey himself) pronounced by Dr. Pavy. Harvey's object in establishing this was that members of the college should 'search and study out the secrets of nature by experiment.' After referring to the bacillus, and the attack upon it by processes of disinfection, Dr. Pavy stated that another way of attacking it was due to researches recently conducted. It had been found that the bacillus required virgin soil for its growth, and by certain means it might be brought into such a weakened state as only to occasion, when introduced into the system of an animal, an effect of a mild nature, not dangerous to life, instead of the ordinary form of disease; but the effect produced — and this was the great point of practical importance — was as protective against a subsequent attack as the fully developed disease. The knowledge recently acquired had been already practically turned to account upon a large scale for checking the ravages of that exceedingly fatal disease among cattle known as anthrax, or splenic fever; and, if that could be accomplished for one disease, — and more than one could be mentioned, — was there not ground for believing that means would be found for placing others of the class in the same position? Attempts were being made in that direction. All eyes throughout the civilized world were, indeed, fixed upon the work of Pasteur in Paris with reference to hydrophobia. Looking at the nature of the disease, there was nothing inconsistent with its being dependent upon a bacillus, or microbe as Pasteur called it. He had been an eye-witness of Pasteur's work. Judgment, it must be stated, still stands in suspense, but it must also be said that the results obtained tell decidedly in favor of the views advanced.

Two more volumes (xv. and xvi.) of the zoölogical reports of the Challenger expedition have been issued during the last few weeks; and several others may be expected within the next six months, as the treasury grant for the publication of these reports expires on the 31st of March, 1887, so that the various memoirs must be out of the printer's hands before that date.

The removal of the natural history collections from Bloomsbury to South Kensington has been accompanied by a steady increase in the publications both of the zoölogical and of the geological departments. The fossil mammalia are being catalogued by Mr. Lyddeker, formerly paleontologist to the geological survey of India; the fourth part of his work, which deals with the Proboscidea, being now in the press. Mr. R. Kidston has made a valuable contribution to paleo-botany by his catalogue of the palaeozoic plants, which is especially complete as regards the literature of the subject. The last volume issued by the geological department is the catalogue of Blastoidea, which is the joint work of Mr. R. Etheridge, jun., and Dr. P. H. Carpenter, and is illustrated by twenty quarto plates. The museum contains several remarkably fine types of this class, which were collected some years ago by Messrs. Eilkertson and Rofe respectively from the carboniferous limestone of Lan-